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Docee River Counting Fence 1989 Operations

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ABSTRACT

Winther, I., S.K. Bachen and R.D. Goruk. 1990. Docee River counting fence. 1989 Operations. Can. Data Rep. Fish Aquat. Sci. 796. iii + 11 p.

The Docee River Counting Fence (Central Coast, B.C.) was operated from July 4 to August 6 of 1989. Managers operating the Smiths Inlet sockeye fishery use the inseason sockeye escapement data provided by the fence. In 1989, 163,804 sockeye were counted through the fence. Length and sex data were collected from 116 Docee River sockeye and age data were collected from 109 of these fish. Age 5_2 sockeye composed 41% of the fish sampled and had a mean hypural length of 51.7 cm. Age 4_2 sockeye composed 59% of the fish sampled and had a mean length of 44.9 cm. Mean hypural length was the same between sexes of the same age. The sex ratio of all fish sampled was approximately 2.3:1. Fence and camp maintenance and operations are described.

RESUME

Winther, I., S.K. Bachen and R.D. Goruk. 1990. Docee River counting fence. 1989 Operations. Can. Data Rep. Fish Aquat. Sci. 796. iii + 11 p.

La barrière de comptage de la rivière Docee (dans la zone centrale du littoral de la Columbie-Britannique) a été en opération du 4 juillet au 6 août 1988. Les gestionnaires de la pêche au saumon rouge de l'inlet Smith utilise les données saisonnières d'échappée reculillies à la barrière. La longueur et le sexe de 116 saumons rouges de la riviere Docee ont été déterminés de meme que l'âge de 109 saumons. Les saumons rouges d'âge 5_2 représentaient 41 % des poissons échantillonnés et avaient une longueur à l'hypural de 51.7 cm tandis que le groupe d'âge 4_2 formait 59% des poissons et avaient une longueur moyenne de 44.9 cm. Les longueurs moyennes à l'hyupural des mâles et des femelles de même âge étaient identiques. La proportion des sexes pour l'ensemble des poissons echantillonnes etait de 2.3:1.Les opérations de maintenance de la barrière et des installations sont aussi décrites dans cet article.

INTRODUCTION

The Docee River is located in the Central Coast District of British Columbia within Canadian Department of Fisheries and Oceans Statistical Area 10 (Fig. 1). The Docee River is less than 1 km long, draining Long Lake into Wyclees Lagoon. Wyclees Lagoon empties North into Smith Inlet.

The Docee River counting fence has been in operation since 1972. Sockeye escapements into Long Lake have been monitored to provide in season estimates to Managers of the Smith Inlet sockeye fishery. The counting fence operates from late June or early July to mid August.

METHODS

The Docee River Camp was opened June 29 and closed August 6, 1989. Supplies and equipment were transported by boat from Prince Rupert, Dawsons Landing and Machmell Camp to the float in Wyclees Lagoon June 26 to 28, 1989. Supplies were transported from the float to the camp with an all terrain vehicle (ATV) and trailer.

FENCE MAINTENANCE & OPERATION

A jet boat and chain saw were used to clear logs and debris from the river and the lower lake. A shear boom was positioned across the mouth of the river to prevent debris from drifting into the river and fouling the fence.

Before the fence frames were lowered into the river, the counting panels were cleaned and repainted. The frames were first lowered July 2. Rocks were moved with pike poles and/or cable straps to level the frames and reduce the number of holes under the fence. Holes under the fence were plugged with sand bags filled with rocks. The fence was not operational until July 4 at 14:00.

Winches, pulleys and cables were repaired or replaced as neccessary. The large pulley wheels for lowering the fence frames were painted. Debris was cleared from the fence daily. Holes under the fence were plugged with sand bags as they were discovered.

Fish were counted through the fence by a two man crew working one hour shifts as described by Thompson and Goruk (1988). Counts were made from July 4 to August 6.

Dead fish caught in the fence were collected and sampled. Samples consisted of hypural length, sex and scales. Scales were collected onto scale books and sent to the Scale lab in Vancouver.

CAMP MAINTENANCE

Repairs to the cabin were minimal in 1989. A pump was installed to improve water pressure in the cabin plumbing. Representatives of the Department of Public Works (DPW) identified

$22,400 of repairs to upgrade the Docee River cabin to meet health and safety requirements. It may be more cost effective to build a new structure than upgrade the old one.

The grounds around the camp, the garbage dump and the road were cleared with a brushing machine and machetes.

The skidder road from Wyclees Lagoon to the camp was too narrow for the ATV and trailer. Stumps were removed from a portion of the road by blasting. Logs and roots remaining after blasting were cut with a chain saw. The road is still in poor condition. The decking on the hill near the camp is smashed and needs to be replaced. Decking would not be required if the road was widened and cut into the hill further. Blasting or heavy machinery is needed to do this.

RESULTS & DISCUSSION

Weather conditions and water levels recorded at the Docee River Fence are shown in Table 1 (Fig. 2).

Sockeye were counted through the Docee River fence shortly after it was installed on July 4. The relatively low numbers at the beginning of the count would suggest few sockeye had ascended the river into Long Lake before the fence was installed. Daily counts were erratic with maxima of 14,732 and 13,635 sockeye through the fence on July 18 and July 31 respectively (Fig. 3). Low counts expressed as a flattening of the cumulative count curve (Fig. 4) are likely the result of commercial fisheries. Daily and cumulative counts of sockeye and chinook appear in Table 2. Sockeye fisheries were held in Smith Inlet July 2-3, 9-10, and 16-17. Catches appear in Table 3. Fisheries affect sockeye counts through the fence from 1 day after the fishery opens to 6 days after it closes.

A total of 163,804 sockeye were counted through the Docee River fence. Sockeye escapement to Long Lake was estimated at 166,804. The commercial gillnet fishery caught 63,209 sockeye and the Indian food fishery caught 149 sockeye for a total of 63,358 fish harvested. The total Long Lake stock was 227,162 sockeye.

Samples were collected from 116 sockeye from which 109 were aged. Length frequencies broken down by age and sex appear in Table 4. Age 4_2 fish made up 59 % of the sample and age 5_2 fish made up 41 % of the sample. The male:female ratio was 2.3:1. Differences in mean hypural length between sexes of the same age were negligible. Mean hypural lengths of age 4_2 and 5_2 sockeye (males and females combined) were 44.9 cm and 51.7 cm respectively.

REFERENCES

Thomson, B.L., and R.D. Goruk. 1988. An historical overview of the Docee River Enumeration Program 1963-1987. Can. Data Rep. Fish. Aquat. Sci. 702: iii + 8 p.

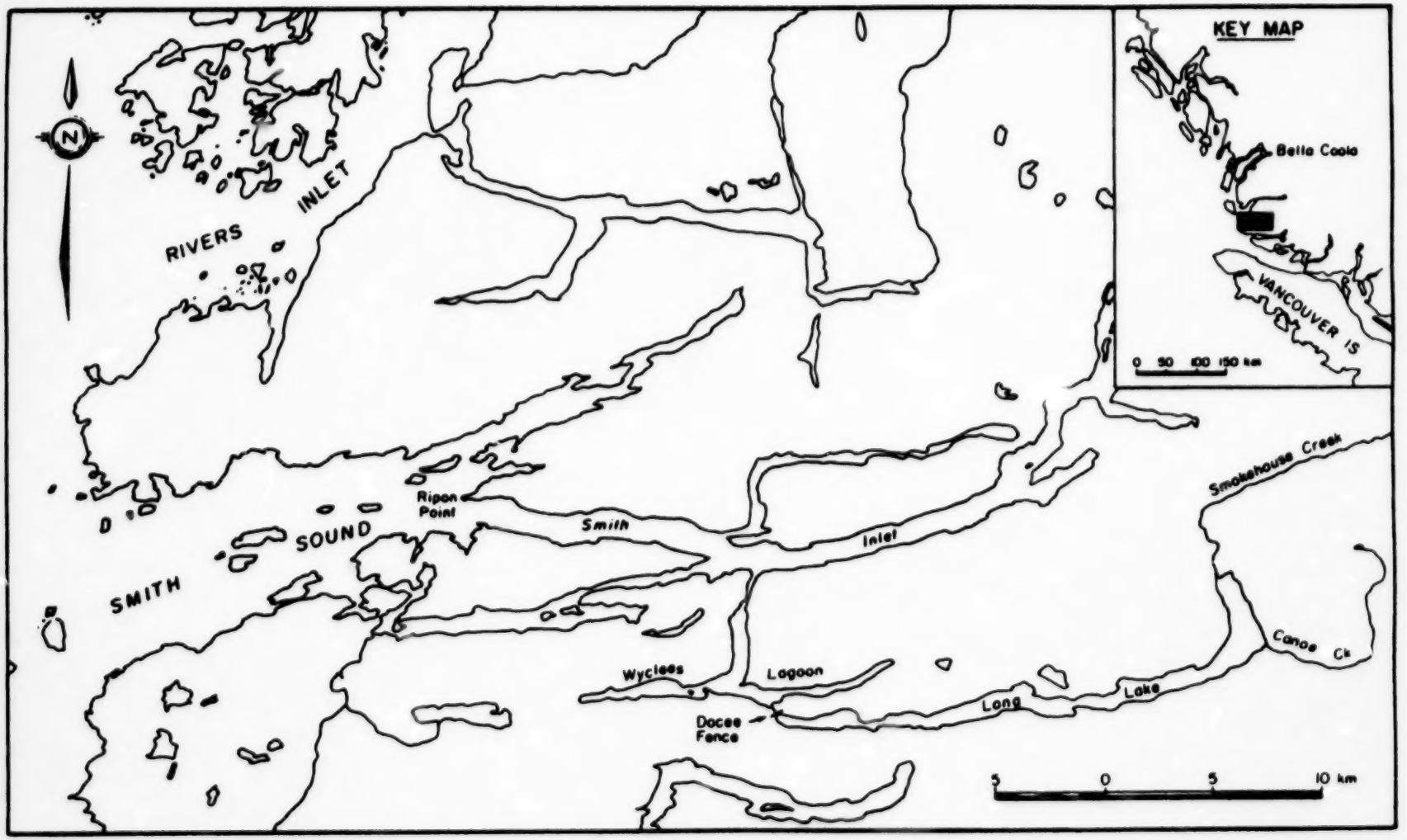

FIGURE 1. Location of Docee River, Smith Sound.

TABLE 1. Docee River 1989 daily weather and river levels.

DATE	RIVER LEVEL (m) AM	PM	WEATHER	
JULY 03			AM-rain	PM-rain
JULY 04	1.00	1.00	AM-broken overcast	PM-heavy rain
JULY 05	1.05	1.05	AM-partly cloudy	PM-rain, sunny breaks
JULY 06	1.05	1.03	AM-overcast	PM-sunny, some cloud
JULY 07	0.98	0.97	AM-overcast	PM-overcast
JULY 08	0.95	0.91	AM-overcast	PM-overcast, breaks
JULY 09	0.91	0.86	AM-overcast	PM-sunny, hot
JULY 10	0.88	0.85	AM-overcast	PM-sunny
JULY 11	0.89	0.89	AM-overcast	PM-clear
JULY 12	0.89	0.88	AM-fog	PM-sunny
JULY 13	0.89	0.91	AM-overcast	PM-sunny
JULY 14	0.91	0.91	AM-clear, some cloud	PM-sunny, hot
JULY 15	0.91	0.89	AM-some cloud	PM-some cloud
JULY 16	0.91	0.91	AM-overcast	PM-overcast, windy
JULY 17	0.94	1.00	AM-rain	PM-rain
JULY 18	1.02	1.03	AM-overcast	PM-rain
JULY 19	1.03	1.03	AM-overcast	PM-rain
JULY 20	1.03	1.03	AM-overcast	PM-overcast
JULY 21	1.06	1.09	AM-rain	PM-heavy rain
JULY 22	1.09	1.09	AM-clear, some cloud	PM-scattered cloud
JULY 23	1.05	1.00	AM-overcast	PM-scattered cloud
JULY 24	0.98	0.94	AM-overcast	PM-clear, hot
JULY 25	0.91	0.89	AM-overcast	PM-clear, hot
JULY 26	0.88	0.88	AM-fog	PM-clear
JULY 27	0.85	0.82	AM-overcast	PM-overcast
JULY 28	0.80	0.79	AM-overcast, breaks	PM-clear, some cloud
JULY 29	0.77	0.73	AM-overcast	PM-sunny
JULY 30	0.73	0.73	AM-overcast	PM-sunny
JULY 31	0.73	0.73	AM-high fog	PM-sunny
AUG 01	0.73	0.73	AM-high fog	PM-low overcast, rain
AUG 02	0.73	0.70	AM-light rain	PM-light rain
AUG 03	0.70	0.70	AM-part cloudy	PM-clear
AUG 04	0.70		AM-high overcast	PM-
AUG 05	0.70	0.70	AM-low overcast, rain	PM-sunny
AUG 06	0.67		AM-overcast	PM-

FIGURE 2. 1989 DOCEE RIVER

MORNING WATER LEVELS (M)

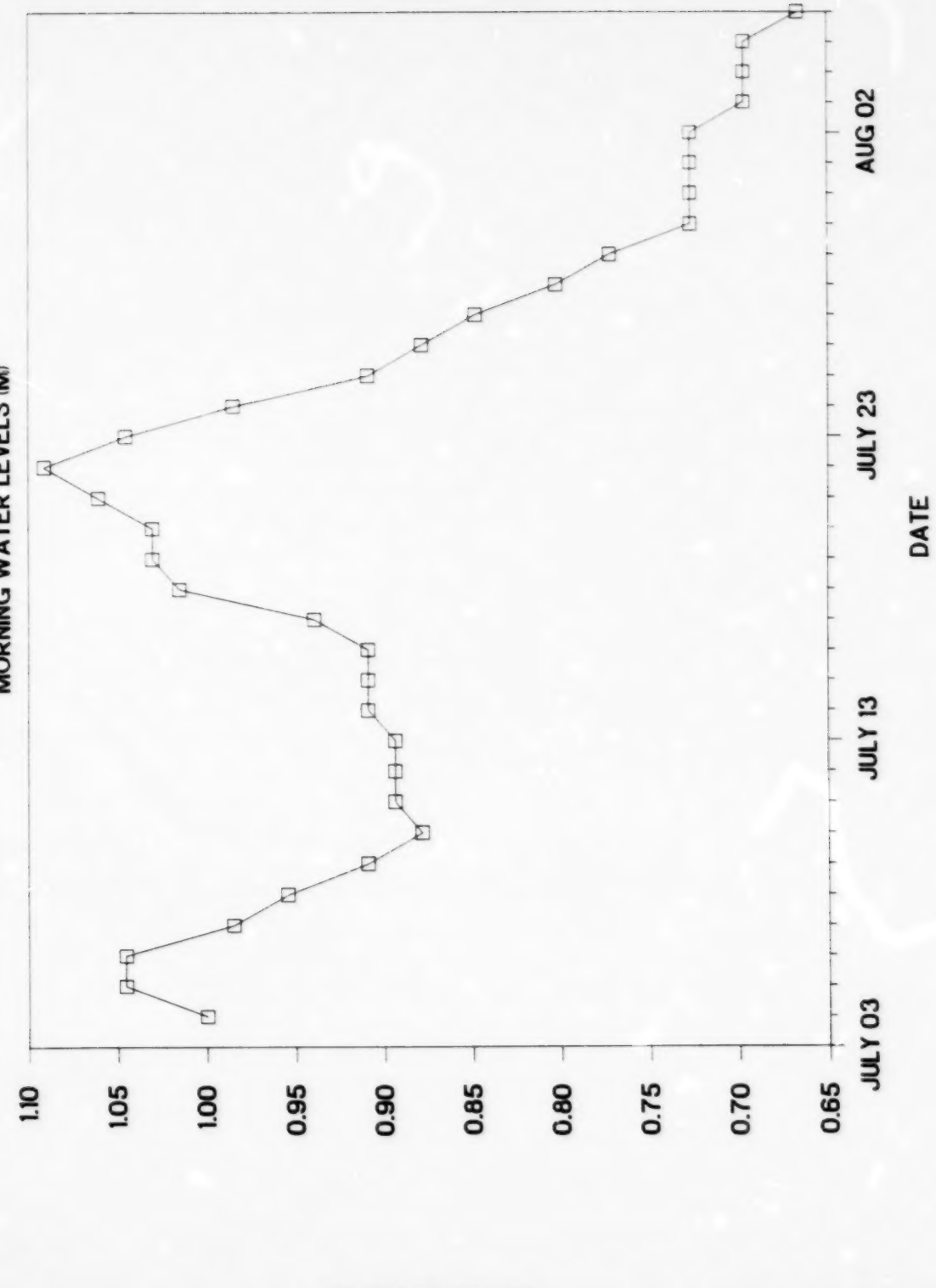

FIGURE 3. 1989 DOCEE RIVER

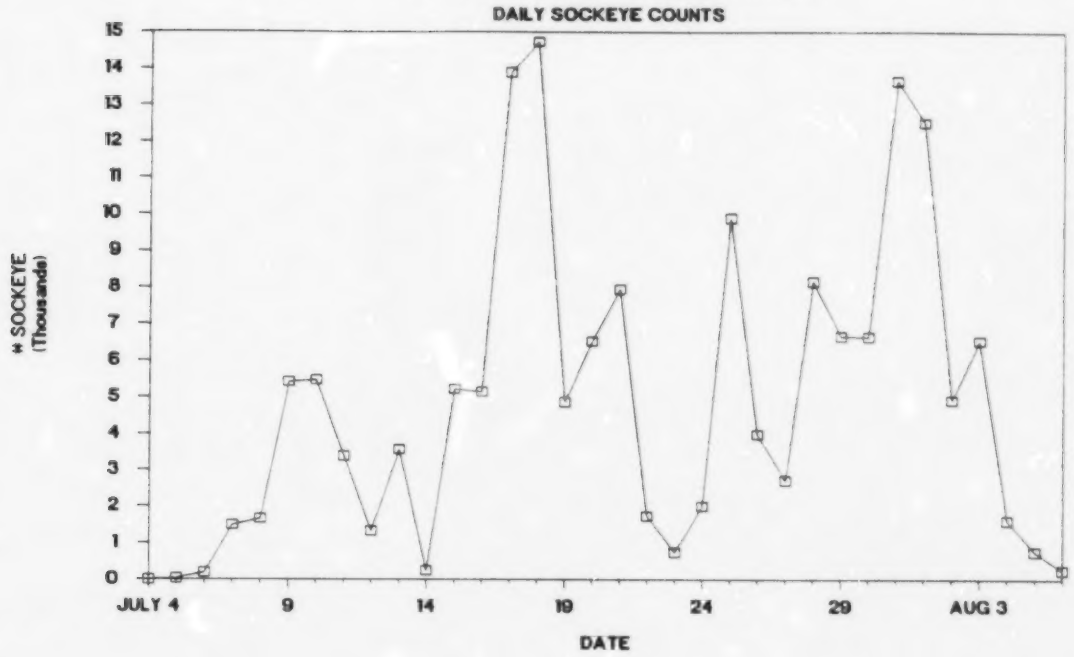

FIGURE 4. 1989 DOCEE RIVER

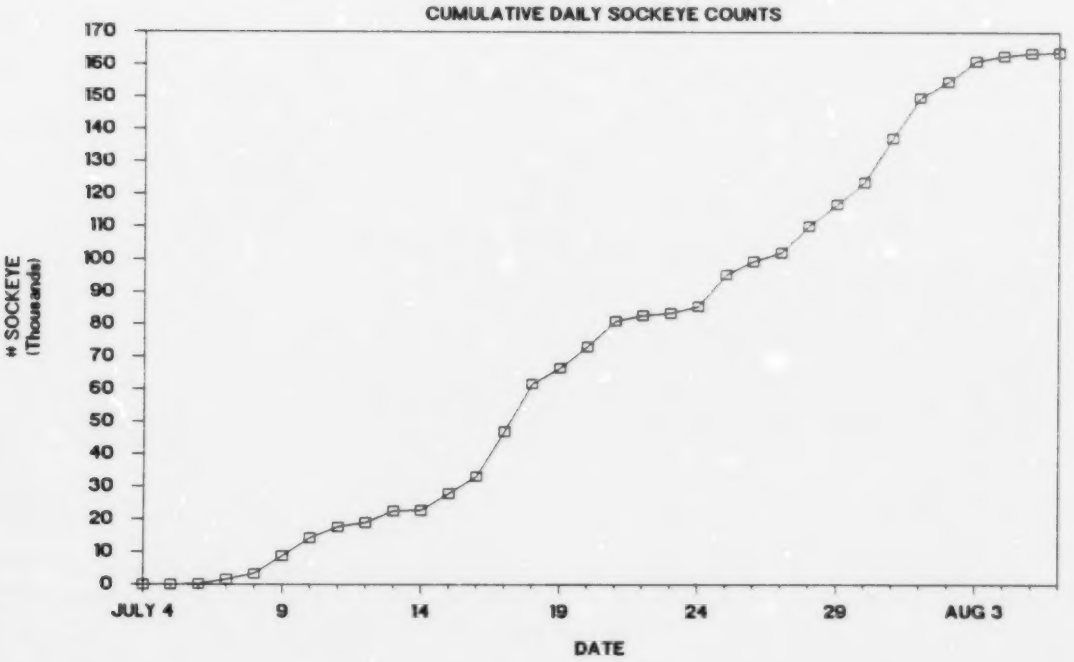

TABLE 2. 1988 Docee River fence daily counts.

DATE	DAILY SOCKEYE	DAILY CHIN	CUMULATIVE SOCKEYE	CUMULATIVE CHIN	COMMENTS
JULY 4	4		4		FENCE IN 14:00, 1 SEAL, 1 TROUT
5	32		36		2 TROUT
6	189		225		1 TROUT
7	1,491		1,716		
8	1,665		3,381		
9	5,422		8,803		
10	5,464		14,267		
11	3,373		17,640		
12	1,331		18,971		
13	3,558		22,529		
14	245		22,774		
15	5,217		27,991		
16	5,150		33,141		
17	13,882		47,023		
18	14,732		61,755		
19	4,862		66,617		
20	6,525		73,142		
21	7,936		81,078		
22	1,729		82,807		1 COHO
23	746		83,553		
24	2,000		85,553		
25	9,880		95,433		
26	3,965	3	99,398	3	
27	2,698	3	102,096	6	
28	8,153		110,249	6	
29	6,652	1	116,901	7	
30	6,651	1	123,552	8	
31	13,645	2	137,197	10	
AUG 1	12,512	1	149,709	11	
2	4,921		154,630	11	
3	6,545	6	161,175	17	
4	1,617	2	162,792	19	
5	759	2	163,551	21	
6	253		163,804	21	
FINAL*			166,804		

* 3000 sockeye were added to the final fence count to account for fish arriving after August 6. Total escapement = 166,804.

Table 3: AREA 10 GILLNET FIELD CATCH FIGURES - 1989

Week	Date	Opr	Sockeye	Coho	Pink	Chum	Chin	Jack	Sthd
WEEK 27	02-Jul	196	6818	304	1	321	23	12	0
	03-Jul	184	6577	389	18	468	92	13	12
	TTD	380	13395	693	19	789	115	25	12
WEEK 28	09-Jul	198	12864	422	88	661	86	3	2
	10-Jul	154	11484	899	161	1433	58	53	9
	TFW	352	24348	1321	249	2094	144	56	11
	TTD	732	37743	2014	268	2883	259	81	23
WEEK 29	16-Jul	193	14561	545	193	595	72	36	2
	17-Jul	135	10905	698	400	619	131	58	8
	TFW	328	25466	1243	593	1214	203	94	10
	TTD	1060	63209	3257	861	4097	462	175	33

TABLE 4. Length frequency at age of Docee River sockeye, 1989.

Hypural Length (cm)	AGE 4_2 Males	AGE 4_2 Females	AGE 5_2 Males	AGE 5_2 Females	Unknown* Females
39	1				
40					
41	3				1
42	3	1			
43	2	2			
44	4	1			1
45	15	2			
46	13	1			
47	12	1	1		
48		1	1		
49	2		1		
50				4	
51			6	7	2
52			3	7	2
53			2	5	1
54			1	4	
55				3	
Mean Length (cm)	45	44.6	50.9	52.1	
Std. Dev.	2	1.8	1.8	1.5	
TOTAL (N)	55	9	15	30	7

Age Distribution (percent)
Age 4_2: 58.7%
Age 5_2: 41.3%
Total fish aged: 109
Total fish sexed and measured: 116
* All males were aged

Appendix 1: Docee River Fence sockeye samples, July 1989

Sex	Length (cm)	Age	Sex	Length (cm)	Age
M	45.0		M	45.5	4 2
M	47.0	4 2	M	46.0	4 2
M	44.5	4 2	M	47.0	4 2
M	48.0	5 2	M	47.0	4 2
M	47.0	4 2	M	45.5	4 2
M	52.5	5 2	M	48.0	
M	46.0	4 2	M	46.0	4 2
M	48.5	4 2	M	45.0	4 2
M	44.0	4 2	M	44.5	4 2
M	51.0	5 2	M	45.0	4 2
M	51.0	5 2	M	46.5	4 2
M	51.0	5 2	M	44.5	4 2
M	44.0	4 2	M	44.5	4 2
M	47.0	4 2	F	43.0	4 2
M	47.0	4 2	F	44.0	4 2
M	48.5	5 2	F	52.0	5 2
M	45.5	4 2	F	44.5	4 2
M	44.5	4 2	F	53.0	
M	52.0	5 2	F	43.5	
M	45.0	4 2	F	45.0	4 2
M	51.0	5 2	F	51.0	5 2
M	50.5	5 2	F	51.0	5 2
M	45.0	4 2	F	53.0	5 2
M	45.5	4 2	F	53.5	5 2
M	41.0	4 2	F	52.5	5 2
M	44.5	4 2	F	51.5	
M	45.0	4 2	F	51.0	5 2
M	47.0	4 2	F	52.0	5 2
M	47.0	4 2	F	50.0	5 2
M	43.0	4 2	F	50.0	5 2
M	51.0	5 2	F	48.0	4 2
M	45.0	4 2	F	51.5	
M	41.0	4 2	F	46.5	4 2
M	43.0	4 2	F	51.0	5 2
M	53.5	5 2	F	42.0	4 2
F	50.0	5 2	F	51.5	5 2
F	54.5	5 2	M	39.0	4 2
F	53.0	5 2	F	54.0	5 2
F	45.5	4 2	F	51.0	
F	55.0	5 2	F	53.5	5 2
F	50.5	5 2	M	43.5	4 2
F	52.0	5 2	F	42.5	4 2
F	50.0	5 2	F	41.0	
F	51.5	5 2	M	48.5	4 2
F	53.5	5 2	M	44.0	4 2
F	50.5	5 2	M	52.0	5 2
F	52.5	5 2	M	52.0	5 2
F	52.0	5 2	F	53.0	5 2
F	50.5		M	46.0	4 2
F	52.0	5 2	F	55.0	5 2
M	44.5	4 2	F	51.0	5 2

Appendix 1: Docee River Fence sockeye samples, July 1989

Sex	Length (cm)	Age	Sex	Length (cm)	Age
M	45.0	4 2	M	47.0	4 2
M	46.0	4 2	M	42.0	4 2
M	45.5	4 2	M	44.5	4 2
M	46.0	4 2	M	41.5	4 2
M	46.5	5 2	M	46.0	4 2
M	47.0	4 2	M	41.0	4 2
M	46.0	4 2	M	47.0	4 2
M	41.5	4 2	M	52.5	5 2
M	41.0		M	43.0	

Appendix 2: 1989 TIDE HEIGHTS (M)